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Dear Mr. Ushiroda,

As you have requested, I am writing to provide a summary of my opinions related to Mark H. and Rie H. v. Paul Lemahieu. This report includes a summary of my evaluation of Natalie and Michelle H., as well as my opinions regarding past reports provided by the expert witness for the plaintiffs in this case, Dr. Daniel LeGoff. In addition to observing and conducting relevant assessments with the girls, I reviewed the past reports by Dr. LeGoff, as well as other parts of the girls' educational and medical records as was relevant.

Before summarizing my findings and opinions, I should note that I have not served as an expert witness in any other court cases or fair hearings in the past four years (indeed, I have never functioned in this capacity prior to this case).

This report is structured to first provide a summary of my evaluations of Natalie and Michelle, after which I review the past reports from Dr. LeGoff.

I. Clinical Evaluation Summaries

A. Natalie H.

DOB: 08/03/ [REDACTED]
Psychological Testing & Classroom Observations: 8/6/08
Parent Interview (Vineland Adaptive Behavior Scales): 8/8/08

Background and History

Natalie H., a 16 year old female, was evaluated upon the request of Mr. Greg Ushiroda, attorney for the defense on the case entitled Mark H. and Rie H. v. Paul Lemahieu. Natalie has a long standing diagnosis of Autistic Disorder and is receiving special education services at Roosevelt High School in Honolulu, HI. This evaluation was performed in order to document Natalie's diagnosis and level of functioning, and as part of a report summarizing my opinions with respect to the expert testimonies for the plaintiffs in this case. A similar summary is provided for Natalie's sister, Michelle. These reports are presented together with my opinions about this case.

Tests and Measures Used

Natalie was observed in her classroom on Wednesday 8/6/2008. In addition, she was administered tests of intellectual functioning and specific observations of social communication behaviors in a separate room in the school on the same day as the classroom observation. Adaptive behaviors were assessed by way of an interview with her parents and a detailed questionnaire and interviews with her teachers.

The specific tests and measures used were:

- Wechsler Intelligence Scale for Children, 4th Ed. (WISC-IV)
- Autism Diagnostic Observation Schedule (ADOS, with revised 2007 algorithm)
- Vineland Adaptive Behavior Scales, 2nd Ed.
- AAMR Adaptive Behavior Scale – School, 2nd Ed. (ABS-S)

Test Results

Intellectual Functioning

Intellectual functioning was assessed by way of the Wechsler Intelligence Scale for Children, 4th Ed. (WISC-IV). On the WISC-IV, Natalie received a Full Scale IQ score of 44, which places her overall performance at less than the 1st percentile for her age. However, this overall IQ score may not be fully representative of her intellectual abilities. Specifically, there was a significant discrepancy between her Verbal Comprehension composite score (45; < 1st percentile) and her Perceptual Reasoning composite Score (59; also < 1st percentile). Similarly, her Working Memory composite score (59) was also significantly higher than her Verbal Comprehension score. Her Processing Speed composite score (50; < 1st percentile) was somewhat, though not significantly, lower than her Perceptual Reasoning and Working Memory Scores.

The table below summarizes the subtest scores and composite scores for Natalie on the WISC-IV. Composite scores are in the form of standard scores, which have an average or mean of 100 and a standard deviation of 15. Subtest scores are in the form of scaled scores, which have a mean of 10 and a standard deviation of 3. The 95% confidence interval is presented as well, and represents the expected range of scores within which Natalie's "true" ability scores would fall. This CI is analogous to the concept of "margin of error" that is often presented in the context of survey results.

Subtests & Composites	Scaled Scores	Standard Scores	Percentile	95% CI
Verbal Comprehension	-	45	< 0.1	42-55
Similarities *	1	-	-	-
Vocabulary	1	-	-	-
Comprehension *	1	-	-	-
Perceptual Reasoning	-	59	0.3	55-70
Block Design	7	-	-	-
Picture Concepts	1	-	-	-
Matrix Reasoning	2	-	-	-
(Picture Completion **)	(1)	-	-	-
Working Memory	-	59	0.3	55-70
Digit Span	7	-	-	-
Letter-Number Sequencing	1	-	-	-
Processing Speed	-	50	< 0.1	47-65
Coding	1	-	-	-
Symbol Search *	1	-	-	-
Full Scale IQ ***	-	44	< 0.1	41-55
* Raw scores of 0 on these subtests				
** Supplemental subtest; not included in composite scores				
*** Full scale IQ not interpreted because of significant differences between composite scores.				

On several subtests, two in the verbal comprehension area and one in the processing speed area, Natalie received scores of zero (no correct responses), suggesting that she was not able to comprehend the requirements of these tasks. For the verbal subtests, she received a zero on a task requiring her to verbalize the ways in which things are similar (e.g., milk and water), and on a task requiring her verbalize an understanding of common concepts. These scores of zero are somewhat difficult to interpret. On the one hand, they likely accurately reflect the magnitude of language impairment that Natalie has. On the other hand, they may mask some more basic comprehension of some of the concepts tested. Nonetheless, on the whole, the results of these verbal subtests together indicate that Natalie's verbal comprehension abilities are severely impaired for her age.

Natalie's Perceptual Reasoning and Working Memory scores were significantly higher than her Verbal score (significant at $p < .05$), though not especially rare in terms of the base rate of such differences (15% - 16% of the normative sample showed differences of this magnitude or greater). Within the Perceptual Reasoning area, Natalie's Block Design subtest score was significantly higher than the average of these subtests (with a magnitude of difference seen in only 2% of the normative sample). This strength in block design on the Wechsler tests of intelligence is not an unusual pattern in individuals with autism.

Social Communication & Autistic Symptomatology

The Autism Diagnostic Observation Schedule (ADOS) was administered as a semistructured observation of verbal and nonverbal social and communication behaviors. The ADOS is a semistructured series of interactions and activities that is designed and validated to elicit behaviors that are helpful in diagnostic determination. The ADOS consists of different modules that are appropriate for different ages and developmental levels. Language skills are a particularly important consideration in choosing the appropriate module. For Natalie, I administered Module 2 and additional activities that allowed for scoring of the algorithm from Module 3. Using the 2007 revised algorithm scoring (Gotham, Risi, Pickles, & Lord, 2007), Natalie's scores from both Module 2 (children older than 5) and Module 3 were significantly above threshold for Autistic Disorder.

Behaviors that were especially notable on the ADOS included frequent echolalia, repetitive and stereotyped phrases, diminished social responsiveness and limited social initiations, diminished eye contact that was also poorly coordinated with other aspects of communication, lack of indication of shared enjoyment in social interactions, and a lack of social communication for the purpose of joint attention. In addition, Natalie exhibited repetitive and stereotyped behaviors that included definite hand flapping and arm waving, especially when excited, and also some visual examination of objects. These repetitive and stereotyped behaviors did not interfere with the administration of the ADOS, but were present with enough frequency to register as positive symptoms on the ADOS.

Adaptive Behaviors at Home

The Vineland Adaptive Behavior Scales, 2nd Ed. Was administered as a measure of Natalie's independent functioning and skills in her home environment. Her parents served as the respondents for this interview, which was conducted on Friday, 8/8/08, at Roosevelt High School. Vineland scores consist of subdomain scores that are grouped within domains (more general categories of functioning). The Vineland also produces an overall composite score. Similar to IQ tests, domain scores are in the form of Standard Scores, with a mean of 100 and a standard deviation of 15. Subdomain scores are in the form of v-Scale scores, which have a mean of 13. Natalie's Adaptive Behavior Composite score was 46 (< 1st percentile), indicating that, compared to same age peers, Natalie's overall adaptive and independent functioning is significantly impaired. Her domain scores did not differ significantly from one another. This allows for the valid use of her composite score as an overall estimate of her abilities.

Natalie's domain and subdomain scores are reported in the table, below. While her scores were fairly consistent across domains, subdomain scores did indicate some specific areas of relative strength and weakness within domains. Within the Communication domain, Natalie is reported to have a relative strength in written skills, including basic reading skills and the ability to print words from memory (and simple notes and sentences with a

model). In contrast, her expressive abilities emerged as a weakness relative to the other communication subdomains. In the area of Socialization, Natalie appears to have a relative strength in the area termed Coping Skills, which include saying "please" and "thank you", and being able to maintain a quiet voice in situations that require this (e.g., in church). She showed a relative weakness in Play and Leisure skills, a subdomain that assesses the development of independent and social play, both of which appear as significant areas of difficulty for Natalie. Subdomain scores within the Daily Living Skills domain were quite consistent with one another.

Vineland Adaptive Behavior Scales

Domain & Subdomain Scores	v-Scaled Scores	Standard Scores	Percentile	90% CI
Communication	-	43	< 1	36-50
Receptive	5	-	-	4-6
Expressive	2 ^W	-	-	0-4
Written	7 ^S	-	-	5-9
Daily Living Skills	-	54	< 1	45-63
Personal	6	-	-	3-9
Domestic	6	-	-	4-8
Community	6	-	-	4-8
Socialization	-	42	< 1	34-50
Interpersonal Relationships	3	-	-	1-5
Play & Leisure Time	1 ^W	-	-	0-3
Coping Skills	6 ^S	-	-	4-8
Adaptive Behavior Composite	-	46	< 1	40-52
S – strength relative to other scores within a domain				
W – weakness relative to other scores within a domain				

Adaptive Behaviors at School

The AAMR Adaptive Behavior Scale -School, 2nd Ed. (ABS-S) was administered as a measure of Natalie's independent functioning and skills in her school environment. Her teacher completed this detailed questionnaire. The ABS-S consists of two parts. Part 1 assesses areas of independent functioning in nine domains. These domains assess skills that enhance independent functioning in a school setting. Part 2 assesses behaviors that may interfere with adaptation to the school setting. The ABS-S yields standard scores (mean =10) and percentile scores. Scores are derived utilizing a normative sample of same age peers with mental retardation. Thus, the ABS-S compares an individual's current adaptive functioning relative to other individuals who present with Intellectual Disability (the Vineland Scales, above, compare children's abilities to same age peers, not selected on the basis of disability).

Results indicated that, relative to other individuals presenting with Intellectual Disability, Natalie scored in the average to above average range on all positive adaptive skill domains (Part 1 scores), except for Socialization, which was in the low average to below average range. These results suggest that Natalie's day-to-day skills in a school setting are generally average compared to peers her age with Intellectual Disability, with the exception of Socialization skills, which are an area of relative weakness.

Natalie's Part 2 scores on the ABS-S suggest that her overall level of problematic or disruptive behaviors are not presently atypical compared to other children with intellectual disability. The exceptions to these scores are low scores on the Stereotyped/Hyperactive Behaviors and Self-Abusive domains (5th and 2nd percentile, respectively).

ABS-2 Domain Scores

Domain	MR Norms	
	Percentile	Standard Score
Part 1		
Independent Functioning	50	10
Physical Development	75	12
Economic Activity	37	9
Language Development	84	13
Numbers & Time	63	11
Prevocational/Vocational	50	10
Self Direction	50	10
Responsibility	50	10
Socialization	16	7
Part 2		
Social Behavior	63	11
Conformity	50	10
Trustworthiness	25	8
Stereotyped/Hyperactive	5	5
Self-Abusive	2	4
Social Engagement	63	11
Disturbing Interpersonal Behavior	25	8

Summary of Findings

In summary, Natalie's presentation during this evaluation was very consistent with a diagnosis of Autistic Disorder (Axis 1 DSM-IV code 299.00). Her developmental history and current functioning indicates that she has significant symptoms in all three areas represented in the DSM-IV-TR criteria for Autistic Disorder. These include significant deficits in social interactions and nonverbal communication, significant delays in language as well as atypical language (echolalia, stereotyped phrases, etc), and repetitive behaviors and interests. These behaviors were evident from past descriptions and current observations, including informal observations in her classroom and school milieu, and formal assessment with the ADOS.

In addition to the her presentation of symptoms of Autistic Disorder, Natalie's intellectual functioning and adaptive functioning as compared to same age peers are consistent with an additional diagnosis of Mental Retardation. Her nonverbal and perceptual problem solving abilities appear to be less significantly impaired than her verbal abilities. A conservative diagnostic approach suggests that a formal diagnosis of Mild Mental Retardation is appropriate (Axis 2 DSM-IV code 317).

While Natalie's overall social, language, and cognitive impairments are significant relative to her same age peers, her level of independent functioning at school compares well to other individuals with diagnoses of Mental Retardation. This is seen using the results from the ABS-S, and suggests that Natalie's level of functioning is strong relative to other children with intellectual impairments. The two areas of functioning on this measure that did indicate problems relative to peers involved repetitive and some self injurious behaviors (e.g., picking at skin, etc). These areas are of course relatively common problems and specific symptoms of autistic disorder. Other domains from the ABS-S do not sample the social and communication symptoms of autism specifically (e.g., diminished social-emotional reciprocity; poor use of eye contact and social communicative gestures, etc). Areas of weakness on the other adaptive skill measure, the Vineland, do include

items that are more specifically reflective of autistic symptom presentation, including diminished attention to peers, lack of friendships, and lack of interactive play, among others. Thus, while not directly comparable, these areas of weakness on social adaptive behaviors on the Vineland, in contrast to relative strengths in other areas of adaptive behaviors on the ABS-S, are consistent with Natalie's diagnosis of Autistic Disorder.

B. Michelle H.

DOB: 2/15/

Psychological Testing & Classroom Observations: 8/7/08

Parent Interview (Vineland Adaptive Behavior Scales): 8/8/08

Background and History

Michelle H., a 17 year, 5 month old female, was evaluated upon the request of Mr. Greg Ushiroda, attorney for the defense on the case entitled Mark H. and Rie H. v. Paul Lemahieu. Michelle has a long standing diagnosis of Autistic Disorder and is receiving special education services at Roosevelt High School in Honolulu, HI. This evaluation was performed in order to document Michelle's diagnosis and level of functioning, and as part of a report summarizing my opinions with respect to the expert testimonies for the plaintiffs in this case. A similar summary is provided for Michelle's sister, Natalie. These reports are presented together with my opinions about this case.

Tests and Measures Used

Michelle was observed in her classroom on Thursday 8/7/2008. In addition, she was administered tests of intellectual functioning and specific observations of social communication behaviors in a separate room in the school on the same day as the classroom observation. Adaptive behaviors were assessed by way of an interview with her parents and a detailed questionnaire and interviews with her teachers.

The specific tests and measures used were:

- Wechsler Abbreviated Scale of Intelligence (WASI)
- Autism Diagnostic Observation Schedule (ADOS, with revised 2007 algorithm)
- Vineland Adaptive Behavior Scales, 2nd Ed.
- AAMR Adaptive Behavior Scale – School, 2nd Ed. (ABS-S)

Test Results*Intellectual Functioning*

Intellectual functioning was assessed by way of the Wechsler Abbreviated Scale of Intelligence (WASI). The table below summarizes the subtest scores for the WASI. Subtest scores are in the form of T scores, which have a mean of 50 and a standard deviation of 10. The composite IQ scores are in the form of standard scores, with a mean of 100 and a standard deviation of 15. The 95% confidence interval is presented as well, and represents the expected range of scores within which Michelle's "true" ability scores would fall. This CI is analogous to the concept of "margin of error" that is often presented in the context of survey results.

WASI

Subtests & Composites	T Scores
Verbal IQ	-
Vocabulary	20
Similarities *	20
Performance IQ	-
Block Design	28
Matrix Reasoning *	20
Full Scale IQ	Not calculated because 2 of 4 subtests were based on raw scores = 0

On two subtests, one in the verbal area and one in the performance (nonverbal) area, Michelle received scores of zero (no correct responses), suggesting that she was not able to comprehend the requirements of these tasks. For the verbal subtests, she received a zero on a task requiring her to verbalize the ways in which things are similar (e.g., milk and water). These scores of zero are somewhat difficult to interpret. On the one hand, they likely accurately reflect the magnitude of language impairment that Michelle has. On the other hand, they may mask some more basic comprehension of some of the concepts tested. Nonetheless, on the whole, the results of these verbal subtests together indicate that Michelle's verbal comprehension abilities are severely impaired for her age.

Within the Performance area, Michelle's Block Design subtest score was the highest of all of her scores, but was still greater than 2 standard deviations lower than the average score for her age. While this relative strength in block design on the Wechsler tests of intelligence is not an unusual pattern in individuals with autism, this is consistent with significant impairments in nonverbal intellectual skills.

Social Communication & Autistic Symptomatology

The Autism Diagnostic Observation Schedule (ADOS) was administered as a semistructured observation of verbal and nonverbal social and communication behaviors. The ADOS is a semistructured series of interactions and activities that is designed and validated to elicit behaviors that are helpful in diagnostic determination. The ADOS consists of different modules that are appropriate for different ages and developmental levels. Language skills are a particularly important consideration in choosing the appropriate module. For Michelle, I administered Module 1 based on her observed language functioning. Using the 2007 revised algorithm scoring (Gotham et al., 2007), Michelle's scores were significantly above threshold for Autistic Disorder.

Behaviors that were especially notable on the ADOS included repetitive and stereotyped behaviors, such as close examination of toys and objects, unusual head movements, and tight pressing of her fingers together and against the table. As with her sister, these repetitive and stereotyped behaviors did not interfere with the administration of the ADOS, but were present with enough frequency to register as positive symptoms on the ADOS. Michelle echoed some words and made use of other infrequent words, but no phrases except for one instance of saying "1, 2, 3, go" in anticipation of a game with bubbles. Her affect was quite flat and her intonation and vocal prosody was unusual. Eye contact was diminished and, although not absent, was used only infrequently to indicate some requests or needs. Eye contact was not coordinated with other aspects of communication. Overall, Michelle showed diminished social responsiveness and limited social initiations, lack of indication of shared enjoyment in social interactions, and a lack of social communication for the purpose of joint attention.

Adaptive Behaviors at Home

The Vineland Adaptive Behavior Scales, 2nd Ed. Was administered as a measure of Michelle's independent functioning and skills in her home environment. Her parents served as the respondents for this interview, which was conducted on Friday, 8/8/08, at Roosevelt High School. Vineland scores consist of subdomain scores that are grouped within domains (more general categories of functioning). The Vineland also produces an overall composite score. Similar to IQ tests, domain scores are in the form of Standard Scores, with a mean of 100 and a standard deviation of 15. Subdomain scores are in the form of v-Scale scores, which have a mean of 13. Michelle's Adaptive Behavior Composite score was 39 (< 1st percentile), indicating that compared, to same age peers, Michelle's overall adaptive and independent functioning is severely impaired. Her Domain scores did not differ significantly from one another. This allows for the valid use of her composite score as an overall estimate of her abilities.

Michelle's domain and subdomain scores are reported in the table, below. While her scores were fairly consistent across domains, subdomain scores did indicate some specific areas of relative strength and weakness within domains. Within the Communication domain, Michelle is reported to have a relative strength in written

skills, including basic reading skills and the ability to print words from memory (and, like her sister, simple notes and sentences with a model). In contrast, her expressive abilities emerged as a relative weakness relative to the other communication subdomains. In the area of Socialization, Michelle appears to have a relative strength in the area termed Coping Skills, which include saying "please" and "thank you". These basic social coping behaviors were more advanced than her abilities in the areas measuring interpersonal abilities (Interpersonal Relationships) and independent and social play (Play and Leisure skills). Subdomain scores within the Daily Living Skills domain showed a relative weakness in personal care skills (e.g., difficulty achieving full independence in dressing; need for supervision while bathing, etc).

Vineland Adaptive Behavior Scales

Domain & Subdomain Scores	v-Scaled Scores	Standard Scores	Percentile	90% CI
Communication	-	38	< 1	31-45
Receptive	3	-	-	2-4
Expressive	1 ^W	-	-	0-3
Written	7 ^S	-	-	5-9
Daily Living Skills	-	47	< 1	38-56
Personal	3 ^W	-	-	0-6
Domestic	5	-	-	3-7
Community	5	-	-	3-7
Socialization	-	37	< 1	29-45
Interpersonal Relationships	1	-	-	0-3
Play & Leisure Time	1	-	-	0-3
Coping Skills	6 ^S	-	-	4-8
Adaptive Behavior Composite	-	39	< 1	33-45
S – strength relative to other scores within a domain				
W – weakness relative to other scores within a domain				

Adaptive Behaviors at School

The AAMR Adaptive Behavior Scale -School, 2nd Ed. (ABS-S) was administered as a measure of Michelle's independent functioning and skills in her school environment. Her teacher completed this detailed questionnaire. The ABS-S consists of two parts. Part 1 assesses areas of independent functioning in nine domains. These domains assess skills that enhance independent functioning in a school setting. Part 2 assesses behaviors that may interfere with adaptation to the school setting. The ABS-S yields standard scores (mean =10) and percentile scores. Scores are derived utilizing a normative sample of same age peers with mental retardation. Thus, the ABS-S compares an individual's current adaptive functioning relative to other individuals who present with Intellectual Disability (the Vineland Scales, above, compare children's abilities to same age peers, not selected on the basis of disability).

Results indicated that, relative to other individuals presenting with Intellectual Disability, Michelle scored in the average to above average range on all positive adaptive skill domains (Part 1 scores), except for Economic Activity (monetary skills), which was in the low average range. These results suggest that Michelle's day-to-day skills in a school setting are generally average compared to peers her age with Intellectual Disability.

Michelle's Part 2 scores on the ABS-S suggest that her overall level of problematic or disruptive behaviors are not presently atypical compared to other children with intellectual disability.

ABS-2 Domain Scores

Domain	MR Norms	
	Percentile	Standard Score
Part 1		
Independent Functioning	75	12
Physical Development	91	14
Economic Activity	25	8
Language Development	50	10
Numbers & Time	75	12
Prevocational/Vocational	84	13
Self Direction	84	13
Responsibility	50	10
Socialization	50	10
Part 2		
Social Behavior	91	14
Conformity	63	11
Trustworthiness	84	13
Stereotyped/Hyperactive	50	10
Self-Abusive	75	12
Social Engagement	37	9
Disturbing Interpersonal Behavior	84	13

Summary of Findings

In summary, Michelle's presentation during this evaluation was very consistent with a diagnosis of Autistic Disorder (Axis 1 DSM-IV code 299.00). Her developmental history and current functioning indicates that she has significant symptoms in all three areas represented in the DSM-IV-TR criteria for Autistic Disorder. These include significant deficits in social interactions and nonverbal communication, significant delays in language as well as atypical language (e.g., echolalia), and repetitive behaviors and interests. These behaviors were evident from past descriptions and current observations, including informal observations in her classroom and school milieu, and formal assessment with the ADOS.

In addition to the her presentation of symptoms of Autistic Disorder, Michelle's intellectual functioning and adaptive functioning as compared to same age peers are consistent with an additional diagnosis of Mental Retardation. Her scores on the WASI were two to three standard deviations below the average for her age. This places her overall level of intellectual functioning at the cusp of mild to moderate mental retardation. A conservative diagnostic approach suggests that a formal diagnosis of Mild Mental Retardation is appropriate (Axis 2 DSM-IV code 317), but it is apparent that her level of overall functioning is more significantly impaired.

While Michelle's overall social, language, and cognitive impairments are significant relative to her same age peers, her level of independent functioning at school compares well to other individuals with diagnoses of Mental Retardation. This is seen using the results from the ABS-S, and suggests that Michelle's level of functioning is strong relative to other children with intellectual impairments. Areas of weakness on the other adaptive skill measure, the Vineland, do include items that are more specifically reflective of autistic symptom presentation, including diminished attention to peers, lack of friendships, and lack of interactive play, among others. Thus, while not directly comparable, these areas of weakness on social adaptive behaviors on the

Vineland, in contrast to relative strengths in other areas of adaptive behaviors on the ABS-S, are consistent with Michelle's diagnosis of Autistic Disorder.

II. Evaluation of Plaintiff's Expert Reports (Daniel LeGoff, PhD)

In addition to conducting an independent evaluation of both Natalie and Michelle, I have also reviewed the reports produced by Dr. Daniel LeGoff (01/05/01; 07/07/03; 04/26/04; and 06/06/08). I should note that a number of issues that were raised in Dr. LeGoff's report from 2001 have been recapitulated in his reports from 2003, 2004, and 2008. Therefore, I will spend considerably more time reviewing claims made in the 2001 report, and will address new issues that are raised in subsequent reports in turn.

A. LeGoff Report, dated 01/05/2001

Dr. LeGoff reviewed a number of issues in this report. Generally, these included the standards of diagnosis and treatment as of 1995, the putative lack of such services for Natalie and Michelle prior to 1999, and the question of whether a lack of services caused irrevocable harm to the girls.

Question 1: Were evaluations sufficient for diagnosis and treatment planning?

The first issue raised by Dr. LeGoff was his opinion that past educational evaluations, especially those prior to 2000, were inadequate for the purposes of treatment planning. Dr. LeGoff stated that these reports, in sum, provided input with regard to level of functioning and needs, but were not specific with regard to treatment recommendations. This does appear to be accurate. The reports that I reviewed from 1995 – 1998 did provide a summary of level of functioning and eligibility for special education services. These reports made some recommendations for treatment, but, as Dr. LeGoff has stated, these were not very specific and were left to the IEP team to develop more specific programming. There was mention made about referral to the Hawaii Autism Technical Assistance Program in Michelle's early educational documents, but there is no information for me to review as to whether that consultation took place and if so what the outcome was.

Michelle's records indicate a diagnosis of an autism spectrum disorder by age 3, which is within the range of reasonable age of diagnosis even by today's standards. Natalie had two evaluations prior to age 3 where concern about an autism diagnosis was raised, one at 2 years 1 month, and the other at 2 years 10 months. At the first, a diagnosis of ASD (PDD-NOS or Autism) was "ruled out", but at the second, conducted by Dr. O'Hara at Kaiser Permanente, an initial diagnosis of autism was made. Neither of these evaluations made extensive use of autism-specific observation methods. Whereas in hindsight the first evaluation was not an accurate diagnosis, it should be noted that even with state of the art diagnostic tools by today's standards, the diagnosis of autism under the age of 3 years (especially under the age of 2 ½) is very difficult. Determination of the presence of ASD is statistically reliable by 18 – 24 months (Lord et al., 2006); (Stone et al., 1999). However, there is also a fairly high rate of false positive diagnoses for children under 3, especially under 2 ½ (rate of false positive diagnoses appear to range from 20% - 30%, depending on the study) (Stone et al., 1999; Turner & Stone, 2007). Thus, it appears reasonable and within standards of practice that diagnoses for the girls were made by age 3.

I am aware that while a medical diagnosis of ASD (formally, PDD-NOS) was made for Natalie, there was a period of time where she was classified differently for special education. My experience on this issue is that schools vary greatly in terms of such early educational classifications. Based on my experience, schools also vary in terms of the degree to which such early classification relate to actual educational practice. It is my opinion that an accurate classification of autism has the potential to better direct services and interventions to meet a child's needs. Accuracy on this issue is, I believe, important. However, it is not possible for me to know from existing records whether or to what degree the decision to not place Natalie under the classification of autism affected educational planning.

With regard to the adequacy of evaluations for treatment planning, as stated above, the reports that I reviewed, especially those in 1995 and 1997, were adequate from the point of view of determining level of functioning, but were not specific to treatment recommendations and educational planning.

Question 2: Were Natalie and Michelle provided appropriate psychoeducational services prior to 1999?

The first part of Dr. LeGoff's argument consisted of a review of state of the art treatment and educational methods for children with autism. He reviews programs that can be generally grouped into categories of behavioral teaching approaches (discrete trial teaching, applied behavior analysis, functional communication training, pivotal skills training, etc). For the most part, Dr. LeGoff was accurate in stating there was, in the 1990's, published research showing that these behavioral approaches had statistically significant effects of cognitive, language, and communication abilities in children with ASD. Dr. LeGoff states (p. 4) that the Lovaas group demonstrated "virtual recovery in about half of their subjects". I should note here that this is a very controversial claim, and one that I and others (Mundy, 1993) (Schopler, Short, & Mesibov, 1989) believe goes beyond the data presented in these past research reports. This claim is related to statements made in subsequent reports by Dr. LeGoff, and thus shall be reviewed in more detail in later sections of this report. Dr. LeGoff also reviews structured teaching approaches, notably TEACCH methods.

Together, these approaches represent state of the art approaches to treatment and education for children with autism. In this sense, Dr. LeGoff is correct that some combination of these approaches would have been appropriate for both Natalie and Michelle. It is my experience, however, that school jurisdictions vary greatly in their capacity to provide such services, and that this depends in large part on the range of expertise available in a community. The presence of skills trainers in the girls' program at the present time suggests that provision of such services is a reasonable expectation at the present time. It is not possible for me to know to what extent such services were available in Hawaii in the time period in question (1994 – 1999).

Dr. LeGoff goes on to describe the efficacy of pharmacological treatments for autism. These treatments are not considered front line treatments for this disorder, and instead can be seen as sometimes useful adjunctive treatments with which to address certain symptoms. Medications do not treat what are considered to be the core and specific features of autism. Since provision of medications is within the purview of medical professionals and not educators, it is not clear to me how this section is relevant to questions raised in this case.

Question 3: Did a lack of services cause harm to Michelle and Natalie?

Dr. LeGoff's main contention is that had more state of the art and intensive services been provided, the girls would have made substantially more gains and would be functioning at a far higher adaptive and developmental level. His argument rests largely on a review of research and other reports stating the benefits of early intervention, particularly "ABA-style intervention", are beneficial for children with autism.

The first part of this claim, that there was a "lack of provision of services" (p. 7) for the girls is difficult to evaluate. Clearly the girls both had special education services. The IEP documents that I reviewed were not specific enough to judge what type of instruction was provided in the classroom setting. Dr. LeGoff made incidental observations from which he "noted that [Natalie] was not receiving appropriate services, and that when I inquired with the teacher who her service provider was, she told me that she was not receiving services – no assessment or treatment." (p. 7) I assume that this is an overstatement. That is, while the girls were apparently not receiving the state of the art treatment, they were receiving special education services (special education classroom, plus speech therapy and occupational therapy). The IEP documents state goals and objectives, but do not state instructional methodology. This appears to be similar to most IEP documents that I have reviewed in the past, although other experts may be able to better assess the IEP documents themselves.

Dr. LeGoff extrapolates findings from group research on treatment outcomes to argue that had the girls received state of the art treatments over and above those that were provided, they would have been substantially more advanced in cognitive, language and social skills at the present time. It is here that I believe Dr. LeGoff's claims go beyond what is reasonably inferred from existing research findings. He also uses anecdotal experience in a manner that I believe is not appropriate. For example, on page 14, he states that he was worked with many children who are mainstreamed after "a couple of years of intensive psycho-educational intervention." He goes

on to state, "The research literature on outcomes suggests that this is likely to be the case for about half of autistic children." Further, he states that "there is at least a fifty percent chance" that these girls would have shown improvements that would have allowed mainstream placement. Later on the same page, he states that there would have been a "50% chance of attaining virtually normal intellectual functioning."

Dr. LeGoff does not provide citations here to support these claims. However, based on other parts of his records, it is clear that he is relying on Lovaas (Lovaas, 1987) and McEachin et al. (McEachin, Smith, & Lovaas, 1993). These two papers report on outcomes of the same group of children who received intensive behavioral therapy using the Lovaas model of discrete trial teaching. These papers have been highly influential and indeed are supportive of the efficacy of these interventions. However, these studies report on only a small group of children (19 children in the treatment group), most of whom were boys (16/19). While other reports (including my own research) have partially replicated findings of such intensive therapies, the effects largely are on IQ and cognitive abilities (Bibby, Eikeseth, Martin, Mudford, & Reeves, 2002; Cohen, Amerine-Dickens, & Smith, 2006; Eikeseth, Smith, Jahr, & Eldevik, 2002, 2007; Sheinkopf & Siegel, 1998; Smith, Eikeseth, Klevstrand, & Lovaas, 1997; Smith, Groen, & Wynn, 2000). While the follow up to Lovaas's 1987 report (McEachin et al., 1993) reported on outcomes out to age 11 (on average), no other studies report long term outcomes of these therapies. There are other reports of successful treatment outcomes using behavioral treatment prior to 1995-1997 (e.g., (Harris, Handleman, Gordon, Kristoff, & Fuentes, 1991). However, the body of research available to jurisdictions to make appropriate determinations of appropriate treatment programs was decidedly thin in the 1990's.

More to the point of Dr. LeGoff's claim that the girls would have had a 50% chance of mainstream placement and normal intellectual functioning, it is my opinion that these claims are not supported by the scientific literature. While there has been replication of efficacy of behavioral interventions resulting statistically significant improvements in cognitive and (in some cases) adaptive skills, studies have not replicated the finding of "normal functioning" in 47% of children reported by Lovaas, a claim that in and of itself has been quite controversial.

In addition, it is not clear to what extent the group results cited by Dr. LeGoff (and cited in the paragraphs above) would correspond to the outcomes of individual children. There is no basis in the literature to predict individual outcomes, even after relatively short periods of treatment. First of all, this question has not been adequately addressed in the literature, resulting in a lack of data upon which to judge this question. Second, even where studied, research has observed variability in outcome, but has not identified predictors of outcome (Gabriels, Hill, Pierce, Rogers, & Wehner, 2001). Even further, it is likely that the scientific methodology used in existing group studies of treatment outcomes in autism are not appropriate identify predictors of individual responses to treatment (Yoder & Compton, 2004).

Dr. LeGoff makes extensive use of personal and anecdotal experience to support his claim that Natalie and Michelle would have been likely to have substantially better outcomes if they had received state of the art treatments. This use of anecdotal evidence does not seem relevant to the scientific issues raised in his report and are generally considered likely to result in biased judgments when used to evaluate such scientific claims.

Finally, also on page 14, Dr. LeGoff claims that early state of the art treatment would have resulted in significantly higher potential for employment. This claim assumes the presence of research examining the effects of treatment on long term outcomes. Such research findings did not exist in the 1990's (Howlin, 1997) and do not exist at this point in time.

Question 4: Did harm include distress to the family?

This claim (see pages 15-16) is difficult to evaluate. I would not be able to say whether or not different treatments or even better outcomes would have altered the degree of stress experienced by the family, or the family's reproductive decisions. This seems outside the bounds of an expert scientific opinion. As a clinician, I

can say that my experience is that individuals and families respond to the stress of having a child with disability in widely varying ways, ways that based on clinical experience do not always appear to be related to degree of impairment.

Question 5: Would social skills training/treatment have been effective?

On page 16, Dr. LeGoff states that "Social skills do seem to be trainable....", citing one review paper and one paper on conversational skills for individuals with autism who are more verbal than either Michelle or Natalie. I agree that a focus on social behaviors, as appropriate to age and developmental level, is a very important component to treatment for autism. However, this is a complex area, and research has been mixed in terms of the findings of successful treatments. Some behavioral approaches have reported increases in basic social behaviors in individuals with autism (Koegel & Frea, 1993), but research reports of training more complex social cognitive skills have found that while skills are able to be trained on a basic level, they are often difficult to generalize to other settings (Ozonoff & Miller, 1995). Treatments that are commonly referred to as "social skills training" are most often designed for children more high functioning than either Michelle or Natalie. There are reports of interventions for younger (and lower functioning) children that reported increases in basic social behaviors, such as imitation, gesture use, and joint attention (social sharing). However, these areas of research are for the most part fairly recent and still emerging (Ingersoll, Lewis, & Kroman, 2007; Kasari, Freeman, & Paparella, 2001; Whalen & Schreibman, 2003). Thus, while there was some research in this area by the 1990's, in terms of research relevant to Michelle and Natalie's condition, the statement that "many researchers have found positive results in improving capacity for social engagement" seems to be an overstatement, especially given the time period in question.

Question 6: Would early intensive treatment have reduced the likelihood of future institutionalization?

This claim and argument is raised on page 16. It is not known whether current treatments have had an effect on institutionalization. This is a reasonable hypothesis, but to answer this question requires long term research that to my knowledge has not yet been conducted.

B. LeGoff Report, dated 07/07/2003

1. Use of anecdote as an example of treatment response.

Dr. LeGoff uses roughly 1 page to describe his work with another student as an example of treatment and treatment response. My opinions regarding this use of anecdote are detailed above. However, his statement that "M.C.'s progress is typical of children with autism who have received intensive early intervention and discrete trial training..." (p.2) does not seem accurate. Instead, it is in my opinion, more accurate to state that the results described for this child are representative of the subset of children who show best outcomes with this therapy, but that overall outcomes are variable.

2. Argument that there are predictors of long term outcome and treatment response.

Dr. LeGoff states (p. 2) that, "... the degree of recovery from autistic pathology is primarily determined by three factors: the type of intervention, the intensity of intervention, and the timing of intervention (i.e., the earlier in development, the better)." First of all, the claim that treatment can result in "recovery" from autism is highly controversial, as I have noted on p. 15, above. The implication that there are predictors of long term outcome overstates current evidence, and certainly overstates evidence that existed in the 1990s (Howlin, 1997). Second, Dr. LeGoff's argument that research has identified strong predictors of treatment outcome is an overstatement of current evidence (Gabriels et al., 2001).

I do agree with Dr. LeGoff in stating that the behavioral treatment and teaching approaches that he cites are effective approaches to use with children with autism. I also agree with him that early, intensive, and specialized treatments should be recommended for young children with autism, although it should be noted that the degree of intensity needed for therapeutic change is not known (Gabriels et al., 2001; Sheinkopf & Siegel, 1998). As

stated above, while it is in my opinion true that professionals working with this population generally agree on the importance of early, intensive, and specialized treatments, as a field we can not predict treatment responses of individuals and we do not fully understand which ingredients of treatment are most essential for therapeutic change.

3. Argument that early treatment would have a “knock on effect” that would have altered developmental trajectories (p. 4).

This is essentially the same argument that has been reviewed above: that early treatment would have effects on long term outcome. This concept of a “knock on effect” suggests a mechanism by which early treatment can have long term effects (i.e., that development of basic skills yield opportunities for learning more advanced skills). This is a reasonable way to conceptualize the effects of early treatment, and in this way I agree with Dr. LeGoff. It is not possible, however, to predict individual outcomes, as reviewed above.

C. Evaluation reports from 2004 (evaluation dates: 4/23/04 & 4/26/04)

Here Dr. LeGoff reports an assessment of the girls' functional levels at that time. He used the Leiter-R as a measure of intellectual functioning for both girls, as well as the Vineland scales as a measure of adaptive functioning and the TALC-3 as a measure of language comprehension. I will briefly comment here on the correspondence of the clinical findings with my findings, although this is more relevant for Dr. LeGoff's more recent evaluation of the girls (which took place just prior to my evaluation). In general, however, the findings were consistent with my findings. Both girls are agreed to have a diagnosis of Autistic Disorder. I have argued (above) that both girls also meet criteria for mild mental retardation (with Michelle's intellectual capacities somewhat more impaired and closer to moderate degrees of impairment). Dr. LeGoff is of the opinion that Natalie's intellectual abilities are more consistent with Borderline Intellectual Functioning. While a subtle difference, this is based on the use of the Leiter-R in his 2004 evaluation of the girls. The Leiter-R is a good instrument to measure cognitive abilities in children who have difficulty with verbal comprehension and expression. There have been concerns raised in the past that the Leiter may overestimate IQ for children with autism (Bibby et al., 2002; Shah & Holmes, 1985), making it a potentially useful instrument, but one to be used with caution.

One reason to use instruments such as the Leiter is to be able to assess performance on tasks where one has some degree of confidence that the individual understands the directions given and the nature of the task. On my assessments of both Natalie and Michelle, they exhibited significant delays, well within the range of mild (and for Michelle mild to moderate) intellectual impairment, even on tasks where they obviously understood the task demands and instructions. For Natalie, she showed significant delays on a matrices task (a nonverbal task where children indicate which visual target (design or picture) best completes a pattern. Similar tests (namely, the Ravens Progressive Matrices) have recently been argued to be a good measure of intellectual functioning in autism (Dawson, Soulieres, Gernsbacher, & Mottron, 2007), although one should recognize that considerable controversy exists with respect to the measurement of IQ in autism (Dawson et al., 2007; Scheuffgen, Happe, Anderson, & Frith, 2000). Thus, Dr. LeGoff's statement that Natalie's “test responses give immediate evidence of her intact reasoning and problem solving abilities, which are normally obscured by her language deficits, repetitive behaviors, and lack of social interaction” (p.5 of Natalie's report) appears to me to be an overstatement. I agree that Natalie's (and Michelle's) language delays are a significant impairment. However, on nonverbal tests where they appeared to understand task demands, I did not find repetitive behaviors to interfere with their performance.

It was stated (p. 5 of Michelle's report) that she showed a “net loss” in skills on the Socialization domain of the Vineland. This seems inaccurate because this compares standard scores at different ages. It is probably more accurate to state that Michelle did not make significant gains in this area, and therefore will appear more delayed relative to same age peers.

Both reports at this time state that early treatment of “key pivotal skills” would have resulted the development of “higher-order learning” for the girls (p. 6 of both reports). Treatment research on such pivotal skills (joint attention, social motivation, etc) is not so clear and definitive, and my opinion on this subject is reviewed above (p. 17). This also is related to the previous argument of “knock on effects”, which I also review above (p. 18).

D. Evaluation reports from 06/06/2008

Dr. LeGoff conducted additional assessments of the girls in June 2008. While there are some discrepancies between his report and my findings, including the use of the ADOS (i.e., use of revised norms; some differences in specific item scores), the overall diagnostic findings are in general terms consistent between his reports and mine. Overall, Dr. LeGoff’s choice of instruments and methods were appropriate. There are, however, several aspects of these reports that I comment on, below.

First, with respect to adaptive abilities measured by the Vineland Scales, Dr. LeGoff states that “Michelle’s adaptive functioning has regressed by at least one year for each subdomain [of the Vineland].” (see p. 4 of Michelle’s report). He also states that “Clearly, this is a very negative outcome, and is indicative of continuing inadequate programming” (same paragraph). Dr. LeGoff makes similar claims with respect to Natalie’s functioning.

Dr. LeGoff uses an unusual methodology to support this claim, namely the comparison of age equivalent scores across two different versions of this measure. I do not agree with his claim that the use of age equivalent scores is appropriate “since they are based on the raw scores, and not the normative tables.” Age equivalent scores in fact are derived from the normative sample used to develop a test. In simple terms, such scores are the age at which a particular raw score is the mean (or perhaps median) for a particular age group. Since the Vineland and the Vineland II have two different normative samples, age equivalent scores are no better a solution to comparing across versions than are standard scores. In fact, there are real problems with the use of age equivalent scores. While it is common practice to use such scores, it is my view that these scores are less than ideal. They have numerous psychometric qualities that make them an imprecise measure of functioning (e.g., they are not continuously distributed). The Vineland manual cautions against their use (Sparrow, Cicchetti, & Balla, 2005), and their use in research and practice in autism has been cautioned against in recent literature (Mottron, 2004). There are appropriate uses of age equivalent scores, but it is my opinion that their use in Dr. LeGoff’s report is not appropriate and therefore does not provide a sufficient basis for his claim of regression and inadequate programming.

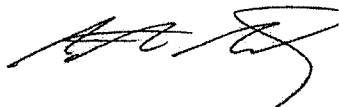
Methodology aside, what is my opinion of the substantive claims by Dr. LeGoff that 1) both girls have shown lack of progress and even “regression”, and 2) that this outcome is attributable to lack of early intervention and poor programming more recently? With respect to the first claim, it is not clear that the girls have in fact regressed in their skills. In fact, reports by teachers and Dr. LeGoff’s 2004 statements suggest that in fact the girls have made progress in a number of areas in recent years. And, although still clearly quite delayed as compared to same age peers in general, my evaluation suggests that both girls are showing reasonably strong adaptive abilities as compared to other children with intellectual disabilities and mental retardation. With respect to the second claim, that poor outcomes are attributable to poor treatment early on, I have reviewed aspects related to this claim in earlier sections of this report. To summarize my general opinion, I would say that while I too would have recommended intensive and state of the art treatments for Michelle and Natalie, it is impossible to predict to what extent these girls would have made gains based on such treatment, and it is therefore impossible to know to what extent current levels of functioning are attributable to treatment history versus other factors.

I conclude with opinions on two additional and final aspects of Dr. LeGoff's statements from his 2008 reports. First, he essentially makes the claim that Natalie's adaptive behaviors on measures such as the Vineland should be considerably higher given her intellectual potential, "even if Natalie were considered to have Mild Mental Retardation." (see page 5 of Natalie's report). He quotes the DSM-IV-TR description of Mild Mental Retardation (MR) that states that individuals with Mild MR usually live in the community with independence or supervision. However, the description of Mild MR in the DSM should not be expected to apply to individuals with a comorbid diagnosis of autism. In fact, clinical experience and research shows that one can expect adaptive abilities to be more impaired than intellectual capacities in individuals with autism (Carter et al., 1998; Klin et al., 2007). In fact, recent research suggests that this may be particularly true for affected individuals with first degree relatives with autism (Mazefsky, Williams, & Minshew, 2008).

Second, Dr. LeGoff concludes in Michelle's report (p. 5) that recent research on effective methods "have emphasized the importance of early and sustained intervention using *approved ABA-methods (italics mine...)*" As I have stated earlier, ABA and other methods do appear to be effective treatments for autism, but the research basis for this (at least in terms of replications of Lovaas's methods), has been fairly recent, and it is impossible to predict individual treatment responses, and there are few if any long term outcome studies of such therapies. He cites Luiselli et al. (2008) and the National Research Council's 2001 report. These are secondary sources which do provide good and useful guidelines for treatment, but that are not in and of themselves evidence of treatment efficacy. He also cites a study by Howlin and colleagues (Howlin, Goode, Hutton, & Rutter, 2004), but this is not a study of treatment effects and therefore I believe gives a false impression that there are long term studies of the effects of treatment on adult outcomes in autism. Finally, his use of the term "approved ABA-methods" suggests that there is some official body that has approved such services. It is true that the NRC and various states (California and New York come to mind) have issued statements recommending ABA methods among other treatment strategies. However, use of the term "approved" seems to overstate the amount of agreement there is in the field with regard to choice of methods.

I have included a list of references that I used in this report on the following page.

Respectfully submitted,



Stephen J. Sheinkopf, Ph.D.

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